

# ATOMIC ENERGY *newsletter*®

A SERVICE FOR INDUSTRY BUSINESS ENGINEERING AND RESEARCH  
ROBERT M. SHERMAN, EDITOR. PUBLISHED BI-WEEKLY BY ATOMIC ENERGY NEWS CO., 1000 SIXTH AVENUE, NEW YORK 18, N. Y.

Dear Sir:

October 18th, 1955  
Vol. 14... No. 5

The atomic energy exposition opening in New York City this week, to run from Oct. 20-Nov. 3, will include a large number of displays of manufacturers who exhibited at the recent atomic trade fair held in Washington, D.C., as well as the USAEC's special display most recently shown at the Geneva, Switzerland, Atoms for Peace Conference. Some 80 U.S. companies had furnished materials for this USAEC display. Sponsorship of the New York exposition will be by the Carnegie Endowment for International Peace, Atomic Industrial Forum, and the Forum's subsidiary, Fund for Peaceful Atomic Development. Site of the exposition will be the Carnegie International Center.

A contract to do research and development on the electrolytic production of alloys of thorium and bismuth was recently obtained by Horizons, Inc., Cleveland. Award of the contract, by the USAEC's Brookhaven National Laboratory, Upton, L.I., was on the basis of Horizons' experience in making pure compounds of such elements as zirconium, thorium, titanium, uranium, etc., where the pure compounds are subsequently used as starting materials to produce the metal itself. (Other CONTRACTS AWARDED, p. 4 this LETTER.)

A nuclear engineering panel session, summarizing papers of interest at the recent Atoms for Peace Conference in Geneva, and other nuclear engineering sessions, will be part of the American Society of Mechanical Engineers' annual meeting this Nov. 13-18, in Chicago. The other nuclear engineering sessions will cover The Role of Steel in Nuclear Engineering; Test of a Once Through Steam Generator with a Liquid Metal as a Heat Source; Aqueous Homogeneous Reactors for Central Station Power; and the preliminary design and economics of the Dresden Nuclear Power Station.

The new firm of Volk Radiochemical Co., Chicago, is the latest to enter the nuclear field. Organizer and head of the new firm is Murray Volk, who had been with Nuclear Instrument & Chemical Corp., Chicago. Volk Radiochemical will process radioactive carbon, sulfur, and phosphorous compounds; do special chemical and biological syntheses; and provide consultation service on radiochemical research problems. (Other MANUFACTURERS' NEWS, p. 4 this LETTER.)

The total tonnage of uranium mined this year in the U.S. will be 43% greater than last year, S.P. Wimpfen, the USAEC's operations manager at Grand Junction, Colo., told a session of the American Mining Congress in Las Vegas, Nev., last week. Last year the USAEC had records of only ten U.S. deposits with more than 100,000 tons of uranium reserves, while now it knows of more than twenty-five such deposits, several being in the multi-million class, he stated. The intensive exploration that has been underway has uncovered important uranium ore reserves outside the Colorado Plateau at the Spokane Indian Reservation, 40 miles northwest of Spokane, Wash.; at an area southeast of San Antonio, Tex.; in the southwest corner of N. Dakota; and in the northwest corner of S. Dakota, Mr. Wimpfen said.

ATOMIC ENERGY BUSINESS REPORTS...

NUCLEAR POWER PLANTS SCHEDULED FOR LATIN AMERICA:- Nuclear power plants are scheduled for Mexico and two other Latin America countries under a plan announced last week in New York by American & Foreign Power, Inc. The plants, for its subsidiary operating companies, will each have a capacity of 10,000-kw. of electrical energy, and will be built by different manufacturers to "obtain the benefit of several of the latest design ideas in the field", according to Henry B. Sargent, president of American & Foreign Power. American & Foreign Power has operating companies in 11 Latin-American countries; it is a subsidiary of Electric Bond & Share. Another subsidiary of Electric Bond & Share--Ebasco Services, Inc.-- will handle design and construction of the plants. Capital for the new plants, which may total an estimated \$25 million, will be made available through American & Foreign Power's own resources, Mr. Sargent stated. Orders for the plant for the Mexican subsidiary, Impulsora de Empresas Electricas S.A., have been placed, according to David H. Matson, president of Impulsora. He said that the reactor to be used will be the sodium graphite type, where liquid sodium metal is the heat transfer medium. (Bilateral agreements between the U.S. and a foreign country are required before a U.S. firm can build a reactor in a foreign country; it is expected that such agreements will be negotiated in the near future with those countries getting the American & Foreign Power reactor plants.)

FOREIGN ACTIVITIES AUTHORIZED BY USAEC:- No prior USAEC approval is now necessary for U.S. firms which engage in certain non-secret foreign atomic energy activities, under a notice published by the USAEC in the Federal Register and which went into effect in the last fortnight. While this new general authorization assists U.S. firms in competing with other nations for the world-wide nuclear reactor export market, there are of course over-riding U.S. regulations governing such foreign activities in the Atomic Energy Act of 1954; the Export Control Act of 1949; the Mutual Security Act of 1954; etc.

FOREIGN REACTOR SALES IMPORTANT FOR U.S. FIRMS, EQUIPMENT MAKER STATES:- The U.S. is vitally interested in the foreign market for nuclear power reactors, Dr. Paul F. Gast, of General Electric Co's Hanford, Wash., atomic products operation told an audience in Everett, Wash., last fortnight. Dr. Gast pointed out that with electricity in the U.S. available at low cost, only the opportunity of selling nuclear reactors in power short countries can at this time justify U.S. manufacturers to launch large-scale power reactor efforts. Such foreign sales can keep U.S. firms at work in the atomic power business, pending the time when nuclear power becomes essential in the U.S. from exhaustion of coal, petroleum and other fuel reserves, he stated.

EARLY PRODUCTION OF NUCLEAR POWER FORECAST FOR BRITAIN:- Nuclear power stations should be feeding electricity into the national grid in England before the end of next year, George Darling, Labor Member of Parliament said in New York last fortnight. He based his prediction on progress at the Calder Hall, Cumberland, station, the first of the British nuclear power plants which will go into service under Britain's program of constructing eighteen nuclear power stations in ten years. Mr. Darling said plans for the first twelve of these plants have been completed, with locations selected for half of them. He observed that while the cost of the electricity produced at Calder Hall will be approximately equal to the electricity cost from coal-fuel stations, Britain's coal shortage is so acute that the project is fully justified. (Calder Hall's output will be 50,000-kw. Britain's eighteen stations are expected to provide 1,500 to 2,000 megawatts of electricity by 1965 for a total plant investment of £300,000,000.)

URANIUM DEMAND TO REMAIN HIGH, ATOMIC COMMITTEE CHAIRMAN STATES:- Future demand for uranium will continue at a high level, Senator Clinton D. Anderson, chairman of the Joint Congressional Committee on Atomic Energy told the American Mining Congress in Las Vegas, Nev., last week. The market for uranium will be sustained by such factors as the U.S. nuclear weapon output "remaining on a high level for an indefinite period to come"; new military applications for nuclear energy; and increasing use of nuclear energy for power production. He said that by next Spring the USAEC would have an authoritative estimate of the uranium it requires, and that this would clarify for the uranium miners their future prospects. He gave as his opinion that current estimates of the demand for uranium ore 20 or 30 years hence are "too conservative".

ATOMIC ENERGY FINANCIAL REPORTS...

FUNDS SPECIALIZING IN NUCLEAR FIELD:- New investments were made last month by Science & Nuclear Fund, Philadelphia, in common stocks of Burroughs Corp., Canadian Industries (1954) Ltd., and Du Pont of Canada. In the same period holdings were increased in common stocks of Aluminium Ltd., Beryllium Corp., Corning Glass, International Business Machines, and Zenith Radio. Bonds of Gunnar Mines, with warrants, were eliminated from the portfolio. After the changes, the Fund was 95% invested, with 60% of its assets (\$712,000 as of Sept. 30th last) in companies carrying on nuclear activities, and 35% in firms in other scientific fields..... A decrease last fortnight in net asset value of Atomic Development Mutual Fund reflected the sharp breaks in security prices which have increasingly occurred in the U.S. security markets since President Eisenhower's illness. Further acting to depress this Fund's net asset value was the world-wide break in copper prices, which had been at an all-time high, and the consequent sell-off in copper stocks; this Fund holds more of Anaconda Co. common than of any other U.S. mining firm. The Fund also suffered from the new lows for 1955 of Westinghouse Electric, Vitro Corp., Preston East Dome, and from the score of Canadian uranium issues in its portfolio which have lost large values.

NEW FIRM IN NUCLEAR FIELD TRADED ON EXCHANGE:- Shares of Nuclear Corp. of America were admitted to trading on the American Stock Exchange last week; both common and class "A" were listed. The common replace the shares of Reo Holding common (which thus gave Nuclear Corp. a ready-made listing), while one share of the "A" stock will be distributed for each share of Reo common held. The transaction has been guided by TelAutograph Corp., which controls Reo Holding. The officers of Nuclear Consultants, Inc., will manage Nuclear Corp. under agreements with TelAutograph which exchange 200 shares of Nuclear Corp. for each share of Nuclear Consultants held by these officers, and for other prerogatives covering this merger of Nuclear Consultants into Nuclear Corp.

CHANGES IN STOCKHOLDINGS BY OFFICERS OF FIRMS IN NUCLEAR FIELD:- Arnold O. Beckman, president of Beckman Instruments, Inc., sold 25,000 shares of his Beckman common stock last month, reducing his direct holdings to 466,933 shares..... L. R. Boulware, vice-president, General Electric Co., bought 4,500 shares of General Electric common last August, making his direct holdings that number.

ANALYSES OF FIRMS WITH NUCLEAR ACTIVITIES NOW AVAILABLE:- A review of Litton Industries, Inc., Beverly Hills, Calif., manufacturers of nuclear instruments, may be obtained from Hill, Richards & Co., Los Angeles, Calif. .... Atomic power and the electric utilities are discussed in the monthly letter of Goodbody & Co., 115 B'way., NYC..... Latest issue of its monthly bulletin on uranium mining stocks is available from Cerie & Co., Electric Bldg., Houston 2, Texas.

NEW EXPERIMENTAL WORK...in the nuclear field...

NEW WEAPONS EXPERIMENTS SCHEDULED:- A series of experiments to determine the safety of various nuclear weapons and similar experimental devices (in the event of accidents) will be conducted at the USAEC's Nevada test site, near Las Vegas, next month. Los Alamos Scientific Laboratory will run the experiments, which will include attempts to detonate assembled fissionable weapons with so-called conventional explosives (simulating enemy aerial bombing of nuclear weapons storage depots), etc.

EXTENT OF U.S. FUSION PROGRAM OUTLINED BY USAEC:- The attempt by the USAEC to obtain controlled energy from fusion reactions (Project Sherwood) began in 1951-52 soon after the first successful fusion weapon was detonated by the USAEC, Lewis L. Strauss, Chairman, and Willard F. Libby, member, of the U.S. Atomic Energy Commission said in Washington last fortnight. The whole idea is still in its infancy, with many complex problems ahead, they stated.

Places where fusion problems are being considered include: Oak Ridge National Laboratory, with theoretical investigations, experimental techniques, and basic experiments underway; Los Alamos Scientific Laboratory, with basic experimentation, theoretical studies, and first studies on the controlled release of fusion energy under consideration; and further theoretical studies at Princeton Univ., New York University, and the University of Calif.

Mr. Strauss said that those groups building fission type nuclear reactors need have no fear that fusion will make their plant obsolete before they have amortized their capital investment. If successful at all, he said, Project Sherwood is merely building a new technology which these same industries may use in the future.



CONTRACTS AWARDED...for nuclear devices & services...

UNITED STATES:- Kaiser Engineers (div. of Henry J. Kaiser Co.) Oakland, Calif., have now obtained a cost-plus-fixed-fee USAEC contract to construct the engineering test reactor for the National Reactor Testing Station, Idaho Falls, Idaho, on which the Kaiser firm had done architect-engineering work. Over-all cost of the reactor is estimated at \$15 million. Conceptual design of the ETR was made by Phillips Petroleum's atomic energy division, which operates the materials testing reactor at the Testing Station. Nuclear design of the reactor core and facilities within the reactor tank is being done by General Electric Co.'s atomic power equipment department under sub-contract to Kaiser. The reactor will provide large experimental spaces in high neutron fields--facilities not now available in the U.S.

Eighteen new non-secret physical research contracts, and fifty-one renewals, have now been given U.S. universities and organizations by the USAEC. Among U.S. firms obtaining grants, General Electric Co. received \$50,000 for fundamental metallurgical research, renewing its previous contract. Largest grant (\$716,600) was to Columbia University, New York, for renewal of its contract in nuclear physics, neutron spectroscopy, and other projects. Other contract renewals were made with Univ. of Illinois, for research on radiation damage (\$84,000); Princeton Univ., for temporary and permanent effects produced by radiation on solids (\$20,041); and others.

CANADA:- Canadair Ltd., Montreal (wholly-owned subsidiary of General Dynamics Corp.) has now obtained a contract from Atomic Energy of Canada, Ltd., to prepare a design and cost estimate for a "swing" type nuclear reactor. The reactor, similar in principle to existing "swimming pool" types, will be a low-power, low-flux machine for AECL's Chalk River, Ontario, atomic energy research establishment. The reactor will probably cost between \$250,000 and \$300,000. It will be designed specifically for determining the remaining potential of partially spent fuel elements, and will therefore be located close to the present reactors at Chalk River and the one being built for AECL to be operated by the Ontario Hydro-Electric Power Commission.

Canadian Westinghouse, Ltd., (jointly owned by Westinghouse Electric, and Westinghouse Air Brake, U.S.) has now received a contract from Atomic Energy of Canada, Ltd., for the design, development and fabrication of multi-purpose "loop" test equipment for the new NRU nuclear reactor now nearing completion at Chalk River. The equipment is used as an addition to the standard reactor equipment, and permits testing such materials as fuels and fuel assemblies in the interior of the reactor under various conditions. Cost of the project is estimated at \$200,000.

NUCLEAR PRODUCTS NEWS...production & marketing...

NEW ACTIVITIES OF MANUFACTURERS:- Lithium iodide (Europium activated) crystals for slow neutron scintillation detection and measurement are now being manufactured on a mass production basis by National Radiac, Inc., Newark, N.J. This firm is said to be the largest producer of scintillation crystals of all types. These crystals include sodium iodide, stilbene, anthracene, diphenyl acetylene, terphenyl, and the firm's Sintilon brand of plastic phosphor detectors.

A controlling interest in the recently established Kaye Development Co., Inc., South Norwalk, Conn., has now been acquired by Atomic Instrument Co., manufacturers of nuclear measurement apparatus. Instruments produced by Kaye (on which patent applications have been filed) enable absolute and instantaneous color measurement to be made in the visible range. They also provide wave length deviation control in the visible range; in the ultraviolet; and in the infrared ranges. President of Kaye Development is Morton Kaye; chairman of the board is Leonard W. Cronkhite, who is president of Atomic Instrument Co.

MARKETING BY MANUFACTURERS:- Three of its Van de Graaff accelerators have now been sold to the French government by High Voltage Engineering Corp., Cambridge, Mass. One of the machines will be used at the Centre d'Etudes Nucleaires de Saclay in conjunction with a synchrotron for basic physics research there; another by the Institut de Recherches Nucleaires at the University of Strasbourg; and the third by the French Atomic Energy Commission in a training program for physicists and engineers.

ATOMIC PATENT DIGEST...licenses available & patents issued...

LICENSES AVAILABLE:- A new group of 37 patented inventions, developed in the course of USAEC-sponsored research, is now open to users on a royalty-free (non-exclusive) basis. Inquiries concerning these patents should be made to the USAEC's Patent Div., Wash. 25, D.C. This group comprises: (1) Iodine-132 generator and shipping container; no. 2,710,249. (2) Ion source; no. 2,710,354. (3) Electromagnetic pressure gauge; no. 2,710,538. (4) Curium-Americium separation and purification process; no. 2,711,362. (5) Polishing metals and composition therefor; no. 2,711,364. (6) Method of cleaning zirconium surfaces to hold electrodeposits; no. 2,711,389. (7) Production of corrosion resistant coatings on metal structures; no. 2,711,972. (8) Temperature control of isotope separation devices; no. 2,712,073. (9) Electrical control circuitry in isotope separating devices; no. 2,712,074. (10) Automatic control of electron discharge devices; no. 2,712,075. (11) Electric discharge device for use in a calutron; no. 2,712,078. (12) Electromagnetic isotope separator; no. 2,712,079. (13) Marker pulse generator; no. 2,712,114. (14) Short circuit eliminator; no. 2,712,636. (15) A simple and foolproof switch mechanism; no. 2,713,093. (16) Means for operating a mechanism at a predetermined velocity; no. 2,713,097. (17) Method of separating thorium from monazite sands; no. 2,713,554. (18) Electron control apparatus; no. 2,713,640. (19) Calutron structure; no. 2,713,641. (20) Eliminating "wow" and "flutter", caused by speed variations, in an inexpensive manner; no. 2,713,677. (21) Controlling pressure of flowing gas to a mass spectrometer; no. 2,714,164. (22) Method of supporting and insulating an ion beam transmitter in a calutron; no. 2,714,165. (23) Improvements in the ion source of a calutron; no. 2,714,166. (24) Neutron selector; no. 2,714,170. (25) Producing and separating gadolinium; no. 2,714,554. (26) Separating certain platinum metals; no. 2,714,555. (27) Heavy water moderated neutron reactor; no. 2,714,577; inventors: E. Fermi and W.H. Zinn. (28) Calutrons; no. 2,714,664; inventor E.O. Lawrence. (29) Isotope separating apparatus; no. 2,714,665. (30) Regulator for calutron ion source; no. 2,714,666. (31) Automatic control arrangement for calutrons; no. 2,714,667. (32) Radiation responsive device; no. 2,714,668. (33) Neutron sensitive coated ionization chamber; no. 2,714,677. (34) Pulse height analyzer; no. 2,715,181. (35) Stabilizing operation of a klystron oscillator; 2,715,185. (36) Isotope separating apparatus; no. 2,715,186. (37) Electron emitter; no. 2,715,196.

NEW BOOKS & OTHER PUBLICATIONS...in the nuclear field...

Reactor Physics, by J. J. Littler and J. F. Raffle, Atomic Energy Research Establishment, Harwell, England. A simplified account of reactor theory, for engineers and experimental physicists with no previous knowledge of the subject.--McGraw-Hill Book Co., New York 36.

Uranium Mining on the Colorado Plateau, by W. L. Dare, R. A. Lindblom, and J. H. Soule. Equipment and methods used in prospecting and mining; costs of various operations; descriptions of the Plateau; etc. Publication No. I.C. 7726.--U.S. Bureau of Mines, 4800 Forbes St., Pittsburgh 13, Pa. (n/c)

Reactor Handbook, Vol. 1, Physics. 790 pages. No. AECD-3645. (\$4.25).....  
Reactor Handbook, Vol. 2, Engineering. 1075 pages. No. AECD-3646. (\$5.50).....  
Reactor Handbook, Vol. 3, Materials. 610 pages. No. AECD-3647. (\$3.50)--Superintendent of Documents, Wash. 25, D.C.

Nuclear Notes for Industry. Issue of Oct. 7, 1955. Guide to information of special industrial interest developed during the course of USAEC-sponsored research.--USAEC, Wash. 25, D.C. (n/c)

NOTES: A new journal, Nuclear Physics, will be devoted to experimental and theoretical study of atomic nuclei, nuclear fields, and the fundamental aspects of cosmic radiation. Editor-in-chief is L. Rosenfeld, Manchester, England. Further information may be obtained from Interscience Publishers, 250 4th Ave., New York 1.

Sincerely,

The Staff,  
ATOMIC ENERGY NEWSLETTER

October 18th, 1955.

